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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,002	10/03/2003	Jozef J.G. Bosch	47161-00041USPT	8899

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JENKENS & GILCHRIST, P.C.
225 WEST WASHINGTON
SUITE 2600
CHICAGO, IL 60606

EXAMINER	
CAI, WAYNE HUU	
ART UNIT	**PAPER NUMBER**
2681	

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,002	BOSCH ET AL.	
	Examiner	Art Unit	
	Wayne Cai	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18,20-24* is/are rejected.

7)☒ Claim(s) *19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/03/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/3/03 & 2/14/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The term "about" in claims 5, 11, and 12 is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6-9, 13-16, 20, and 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kerns (US – 6,144,748).

Regarding claim 1, Kerns discloses a portable communication device, comprising:

- at least one peripheral device including an electro-mechanical or electro-acoustical component (fig. 2, elements 225 & 227);
- a master component (element 213; and its descriptions);

- a system bus (elements 217 & 223) coupled to said at least one peripheral device (elements 211, 225, 227), said system bus including at least two signal-carrying lines (elements 217 & 223), one of said lines being a composite line adapted to carry more than one digital signal between said master component and said at least one peripheral device (elements 214, "CLOCK", "DATA").

Regarding claim 2, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein said portable communication device is one of a hearing instrument, a headset, a personal digital assistant, and a portable telephone, and is adapted to receive power from a battery to which one of said at least two signal-carrying lines is coupled (col. 2, lines 30-47; fig. 2, ""PWR", "CLOCK", and "DATA").

Regarding claim 3, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein said electro-mechanical or electro-acoustical component is one of an electret-type condenser microphone, a MEMS-based microphone, a receiver, a telecoil, a volume control, a sensitivity control, and a switch (element 243).

Regarding claim 4, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein said system bus is coupled to one of a resistor and a current source (Table 1).

Regarding claim 6, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein said composite line carries at least

any two of a power signal, a reference signal, a clock signal, a synchronization signal, and a data signal (fig. 2, "PWR" & "GND").

Regarding claim 7, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein one of said more than one digital signal is a data signal that is time multiplexed into blocks having a number of frames, each frame having at least one data slot (col. 4, lines 9-19; fig. 4 and its descriptions).

Regarding claim 8, Kerns discloses the portable communication device of claim 7 as described above. Kerns further discloses wherein each of said number of frames includes a control slot carrying control data between said master component and said at least one peripheral device (Table 2, "Control Register"), said data signal carrying audio data, a sample of said audio data being transferred via said system bus across at least two frames (col. 4, lines 9-18; fig. 4, and its descriptions).

Regarding claim 9, Kerns discloses the portable communication device of claim 7 as described above. Kerns also discloses wherein said data signal includes control data for controlling a characteristic of said at least one peripheral device (col. 5, lines 21-27).

Regarding claim 13, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein said master component is one of a digital signal processor and an ASIC (fig. 2, element 213).

Regarding claim 14, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses further including a wireless external interface, said portable communication device being programmable via said wireless

external interface with programming data to cause internal parameters of said portable communication device to be adjusted (col. 2, lines 63-65, and col. 3, lines 46-56; fig. 2, elements 219 & 243 and its descriptions).

Regarding claim 15, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses further including a wireless external interface, said portable communication device being programmable via said wireless external interface with audio processing data to cause real-time adjustment of processing parameters of said portable communication device (col. 2, lines 63-65, and col. 3, lines 46-56; fig. 2, elements 219 & 243 and its descriptions).

Regarding claim 16, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses further including a wireless external interface adapted to communicate wirelessly data between said portable device and another portable device (col. 2, lines 57-59).

Regarding claim 20, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses including an external interface (element 240), said external interface being coupled to an external system bus that includes at least two signal-carrying lines ("CLOCK" & "DATA"), one of said lines being an external composite line adapted to carry more than one digital signal between at least one external master component (element 241) and an external peripheral device that includes an electro-mechanical or electro-acoustical component (element 250), said external system bus being communicatively coupled to said system bus via said external interface (fig. 2, and its descriptions).

Regarding claim 22, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein said portable communication device is a hearing instrument (abstract)), said at least one peripheral device includes a microphone and a receiver (elements 211 & 225), said more than one digital signal including a digital audio signal (col. 2, lines 57-65).

Regarding claim 23, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein one of said more than one digital signal is a data signal that includes control data for controlling a characteristic of said at least one peripheral device (col. 3, lines 46-56).

Regarding claim 24, Kerns discloses the portable communication device of claim 1 as described above. Kerns also discloses wherein one of said more than one digital signal is a data signal that includes digital audio data (col. 2, lines 57-65).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 5, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerns.

Regarding claim 10, Kerns discloses the portable communication device of claim 1 as described above. Even though Kerns does not specifically disclose wherein

said at least one data slot is programmable by said master component to include a plurality of data slot; it is however obvious to one skilled in the art to modify or program one data slot that include a plurality of data slots.

Regarding claims 5, 11-12, Kerns discloses the portable communication device of claims 1, and 4 as described above. Kerns also discloses said master component and said at least one peripheral device, operate at a voltage between about 0.7 and about 2.0 volts (Table 1). Kerns, however, fails to disclose wherein said resistor is between about 500 kilo-ohms to about 1200 kilo-ohms, the power consumption of said system bus is between about 30 microwatts and about 1 milliwatt, and the total power consumption of said portable communication device is between about 0.2 milliwatts and about 2 watts. However, it would be obvious to one skilled in the art that these components must be coupled to the system bus in order to operate. Furthermore, the selected range of resistors and the power consumption of the system bus solely relies on the design choices; therefore, it is not novel.

7. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kerns in view of Imaizumi (US 2003/0206237 A1).

Regarding claim 17, Kerns discloses the portable communication device of claim 1 as described above, except for wherein each data bit transmitted on said system bus is sampled twice to increase immunity to glitches and noise on said system bus.

In a similar endeavor, Imaizumi discloses an image processing apparatus. Imaizumi also discloses wherein each data bit transmitted on said system bus is sampled twice to increase immunity to glitches and noise on said system bus (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a double sampling circuit in order to eliminates noises.

Regarding claim 18, Kerns and Imaizumi both disclose the portable communication device of claim 17 as described above. Imaizumi further discloses wherein said composite line carries a data signal and a synchronization signal, said double-sampling of each bit permitting said synchronization signal to be transitioned during any rising or falling edge of the system clock of said double-sampling, whereby said double-sampling enables reliable discrimination between said data signal and said synchronization signal (abstract, and paragraph 0054).

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kerns in view of Muljono et al. (hereinafter Muljono) (US – 6,738,844 B2).

Regarding claim 21, Kerns discloses the portable communication device of claim 1 as described above, except for wherein said system bus is actively driven with tri-state buffers.

In a similar endeavor, Muljono discloses a method and system of implementing termination with a default signal line. Muljono also discloses wherein said system bus is actively driven with tri-state buffers (col. 1, lines 44-60, and col. 6, lines 3-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify and arrive at the claimed limitation by including the system bus actively driven with tri-state buffers in order to reduce the signal reflection.

Allowable Subject Matter

9. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday-Friday; 9:00-6:00; alternating Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wayne Cai
Examiner
Art Unit 2681

ERIKA A. GARY
PRIMARY EXAMINER